

**REMARKS**

Claims 1-9, 11-24, and 26-31 are all the claims presently pending in the application.

Claims 1-9, 11-24, and 26-31 have been amended to more particularly define the invention.

Claims 4-10 and 19-25 have been withdrawn as being un-elected.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-3, 11-18, and 26-31 stand rejected upon alleged informalities (e.g., 35 U.S.C. § 112, first and second paragraphs).

These rejections are respectfully traversed in the following discussion.

**I. THE CLAIMED INVENTION**

The claimed invention, as exemplified by claim 1, is directed to a phosphor mixture for converting ultraviolet light or blue light emitted from a light emitting element into a visible white radiation, including an alkaline earth metal antimonate or a derivative of the alkaline earth metal antimonate including a fluoroantimonate, a manganese(IV)-activated compound, the manganese (IV)-activated compound selected from a group consisting of an antimonate, a titanate, a silicate-germanate, and an aluminate, and a europium-activated silicate-germanate, or a sensitizer selected from a group consisting of Eu(II) and Mn(II) as a secondary activator and having an orange color, an orange-red color, a red color, or a dark red color in a spectrum range over 600 nm, or a mixture of eight or less phosphors having different emission bands

that is brought to a state of broad continuous emission of about 380 to 780 nm, the mixture having a color temperature of about 10,000 K with blue-white color to 6,500 K with daylight color and having a color temperature of about 3,000 K with warm white color to 2,000 K with twilight color of reddish yellow by virtue of the superposition of the emission bands. The phosphor mixture further includes a borate-silicate-phosphate which has been activated by europium and manganese and is represented by general formula

$\text{Me}^{\text{I}}_x\text{Me}^{\text{II}}_y(\text{B},\text{Si},\text{P})_a\text{O}_n\text{X}_m:\text{Eu},\text{Mn}$ .  $\text{Me}^{\text{I}}$  includes at least one element selected from group II and/or group III metals of the Periodic Table and/or at least one lanthanide ion selected from the group consisting of Eu, Pr, Sm, Gd, Dy, and Ce.  $\text{Me}^{\text{II}}$  includes at least one monovalent cation. X includes Cl, F, or Br,  $0 \leq x \leq 10$ ,  $0 \leq y \leq 12$ ,  $0 < a \leq 6$ ,  $0 < n \leq 24$ ,  $0 \leq m \leq 16$ , and B may be completely or partially replaced with P, Si, Ga, or Al and may be partially replaced with V, Nb, Ta, Ge, W, or Mo.

In conventional phosphors, the color rendering index Ra may be disadvantageously as low as 89 to 90, the necessary broadband red component and other light emitting component may be absent, and may not have long-term stability. (See Application at page 3, lines 6-18).

The claimed invention, on the other hand, may produce light having color rendering properties close to those in natural light or incandescent lamp light, and a color rendering index Ra above 90, and may emit a visible white radiation having a high level of color rendering properties. (See Application at page 3, line 19-page 4, line 5).

## II. THE 35 USC §112, FIRST AND SECOND PARAGRAPH REJECTIONS

Claims 1-3, 11-18, and 26-31 stand rejected under 35 U.S.C. §112, first and second paragraphs. The claims have been amended, above, to overcome this rejection. Support for the claim amendments may be found on at least page 39, lines 8-20, that sufficiently enables

one of ordinary skill in the art to make or use the claimed invention.

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

The Examiner has not rejected claims 1-9, 11-24, and 26-31 on the merits. Therefore, these claims are allowable.

### III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-9, 11-24, and 26-31, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 12/14/09



Jeoyuh Lin, Esq.  
Registration No. 56,032  
Sean M. McGinn, Esq.  
Registration No. 34,386

**McGinn IP Law Group, PLLC**  
Intellectual Property Law  
8321 Old Courthouse Road, Suite 200  
Vienna, VA 22182-3817  
(703) 761-4100  
**Customer No. 21254**